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EXAMINER

MCCLAIN-COLEMAN, TYNESHA L.

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,591	Applicant(s) SOMSEN ET AL.	
	Examiner TYNESHA MCCLAIN-COLEMAN	Art Unit 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>20070105</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claims 1 and 6 are objected to because of the following informalities.
Appropriate correction is required.
2. With respect to claim 1, it is suggested to add a space in the word "thefood" found in line 3 of claim 1 of the amended claims.
3. Regarding claim 6, it is suggested to capitalize the letter "t" in the word "the" found at the beginning of the claim.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
5. Claims 9, 12, 20, and 24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. With respect to claims 9 and 24, it is unclear what is meant by the number "5.10³" in the range of 10³ to 5.10³ noted in this claim. The scope of these claims is unclear. It is interpreted that "5.10³" refers to "5x10³."
7. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board

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of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

8. In the present instance, claims 9 and 24 recite the broad recitation 10^2 to 10^5 , and the claims also recite 10^3 to $5 \cdot 10^3$ which is the narrower statement of the range/limitation.

9. Claims 12 and 20 recite the broad recitation less than 0.25 wt.%, and the claims also recite less than 0.1 wt. %, and more preferably 0.05 wt. % which are narrower statements of the range/limitation.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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11. Claims 1, 3, 7, 8, 10, 13-17, 26, and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by *Howie et al.* US 20040265432 (hereinafter "*Howie*").

12. With respect to claims 1, 13, 16, and 27, *Howie* discloses potato slice (potato product, claims 16 and 27) blanching solution (spent blanching medium) containing reducing sugar is pumped through a column containing immobilized enzyme (paragraph [0104]). The enzyme (sugar-withdrawing means) is capable of reducing the level of one or more reducing sugar present in the food (paragraph [0027]). The effluent (active blanching medium) from the column is returned to the potato slices (paragraph 0104)).

13. It is expected that the potato slices disclosed by *Howie* were blanched in active blanching solution in a blanching section, which is separate from the sugar-withdrawing section since the blanching solution described by *Howie* was added to a column.

14. Regarding claim 3, *Howie* discloses the enzyme converts the reducing sugar in the food to another substance before cooking (paragraphs [0013] and [0014]).

15. With respect to claim 7, it is expected the enzyme is kept separate from the food material since the enzyme disclosed by *Howie* is present in the column, and the potato slice blanching solution is added to the column (paragraph [0104]).

16. Regarding claim 8, *Howie* discloses the enzyme used was glucose oxidase (paragraph [0015]).

17. With respect to claims 10 and 14, *Howie* discloses a portion of the reducing sugar is extracted from the food material, and the portion of the extract is added back into the food material. This can be done with a stream that is pumped through a bed or column of immobilized enzyme (enzyme either adsorbed or chemically bonded to a

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substrate) (paragraph [0031]). In the column, only the reducing sugar continues to react and be converted by the enzyme (paragraph [0032]).

18. Regarding claims 15 and 26, since *Howie* discloses the enzyme used is glucose oxidase, it is expected the reducing sugar is glucose (paragraph [0015]).

19. With respect to claim 17, *Howie* discloses potato chips, which were made from fried potato slices, with less than about 150 ppb acrylamide present which is equal to 150 µg per kg of product and falls within the applicant's claimed range (paragraphs [0102] and [0105]).

20. Claims 13, 14, 16, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by *Zyzak et al.* US 20040058046 (hereinafter "*Zyzak*").

21. With respect to claims 13 and 16, *Zyzak* discloses potato slice (potato productm, claim 16) blanching solution (spent blanching medium) containing asparagine is pumped through a column comprising immobilized asparagine-reducing enzyme. The enzyme (asparagine-withdrawing means) is capable of reducing the level of asparagine in food (paragraph [0021]). The effluent (active blanching medium) from the column is returned to the potato slices (paragraph [0105]).

22. It is expected that the potato slices disclosed by *Zyzak* were blanched in active blanching solution in a blanching section, which is separate from the asparagine-withdrawing section since the blanching solution described by *Zyzak* was added to a column.

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23. Regarding claim 14, *Zyzak* discloses a portion of the asparagine is extracted from the food material, the resulting extract is treated with the enzyme, then at least a portion of the extract is added back into the food material. The enzyme may be added to the stream or the stream may be pumped through a bed or column of immobilized enzyme (enzyme either adsorbed or chemically bonded to a substrate) (paragraph [0033]). In the column, it is expected only the asparagine continues to react and be converted by the enzyme.

24. With respect to claim 17, *Zyzak* discloses potato chips, which were made from fried potato slices, with less than about 150 ppb acrylamide which is equal to 150 µg per kg of product and falls within the applicant's claimed range (paragraphs [0103] and [0106]).

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

27. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

28. Claims 9 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Howie et al.* US 20040265432 (hereinafter "*Howie*") as applied to claims 1, 3, 7, 8 above.

29. Regarding claims 9 and 24, *Howie* discloses using glucose oxidase (enzyme) having 1000 units of activity to treat potatoes (paragraph [0193]).

30. However, *Howie* does not disclose the amount of enzyme used in the column system.

31. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to use incorporate this amount of enzyme into the column.

32. One having ordinary skill in the art would have been motivated to do this because *Howie* teaches the enzyme-treated potato chips result in a reduction of acrylamide (paragraph [0193]).

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33. Claims 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Tricoit et al.* US 20040115321 (hereinafter "*Tricoit*")

34. With respect to claims 19 and 21, *Tricoit* discloses blanched potatoes are chilled by soaking in a cold solution containing from 0.1 up to 1% salt (NaOH), salts (K_2HPO_4 , KH_2PO_4 , sodium acid pyrophosphate (SAPP), or the like) and/or an antioxidant, for instance an antioxidant selected from the group consisting of citric acid, ascorbic acid, caffeic acid, chlorogenic acid (paragraph [0062]).

35. However, *Tricoit* does not disclose the potato product having at least 3g potassium (claim 19), at least 3.5g citric acid (claim 19), and at least 100mg of an acid pyrophosphate (claim 21) per kg of product.

36. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to interpret the potato product disclosed by *Tricoit* to include at least 3g potassium (claim 19), at least 3.5g citric acid (claim 19), and at least 100mg of an acid pyrophosphate (claim 21) per kg of product.

37. One having ordinary skill in the art would have been motivated to do this because the amounts disclosed by the applicant of potassium, citric acid, and acid pyrophosphate per kilogram of product is equivalent to .30g, .35g, and .01g, respectively, per 100g of product. The total amount of these items present is about .66g per 100g of product. Since *Tricoit* teaches the total of these items present can go up to about 1%, or 1g per 100g of product, it is concluded the amounts of potassium, citric acid, and sodium acid pyrophosphate taught by *Tricoit* fall within the applicant's claimed range.

38. Claims 2, 22, and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Howie et al.* US 20040265432 (hereinafter "*Howie*") as applied to claim 1 above, in view of *Arroqui et al.*, "Losses by Diffusion of Ascorbic Acid During Recycled Water Blanching of Potato Tissue", 2002, Journal of Food Engineering, 52, 25-30 (hereinafter "*Arroqui*").

39. Regarding claim 2, *Howie* does not disclose recycling the effluent (active blanching medium) back into the blanching section.

40. *Arroqui* discloses blanching systems (potatoes) using recycled water (Introduction, column 2, page 1 and column 1, page 2).

41. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to reuse the effluent disclosed by *Howie* into the blanching system disclosed by *Arroqui*.

42. One having ordinary skill in the art would have been motivated to do this because *Arroqui* teaches blanching causes important losses of ascorbic acid, which is an important nutrient of a potato. Using recycled water during blanching increases the ascorbic acid retention during the potato blanching (Abstract and Introduction, column 1, page 1).

43. With respect to claim 22, *Howie* discloses the enzyme converts the reducing sugar in the food to another substance before cooking (paragraphs [0013] and [0014]).

44. Regarding claim 25, *Howie* discloses a portion of the reducing sugar is extracted from the food material, and the portion of the extract is added back into the food material. This can be done with a stream that is pumped through a bed or column of

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immobilized enzyme (enzyme either adsorbed or chemically bonded to a substrate) (paragraph [0031]). In the column, only the reducing sugar continues to react and be converted by the enzyme (paragraph [0032]).

45. Claims 4 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Howie et al.* US 20040265432 (hereinafter "*Howie*") as applied to claims 1 and 3 above, in view of *Mitz* US 3014805 (hereinafter "*Mitz*").

46. Regarding claims 4 and 23, *Howie* does not disclose a micro-organism capable of converting glucose.

47. *Mitz* discloses an enzyme system which degrades a reducing sugar such as glucose (claim 4, column 1, lines 63-65). The enzyme system can be derived from reducing sugar fermenting yeast organisms of the genus *Saccharomyces* (claim 23) and of the genus *Candida* (column 2, lines 26-39).

48. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the enzyme system disclosed by *Mitz* into the column disclosed by *Howie*.

49. One having ordinary skill in the art would have been motivated to do this because *Mitz* teaches degrading reducing sugars help to minimize the development of brownish color and odor in a food product (column 1, lines 23-27).

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50. Claims 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Howie et al.* US 20040265432 (hereinafter "*Howie*") as applied to claims 1 and 3 above, in view of *Xu et al.* WO 0178524 (hereinafter "*Xu*").

51. With respect to claims 5 and 6, *Howie* does not disclose using *Bacillus coagulans* to convert reducing sugars in food products.

52. *Xu* discloses treating a potato substance with an enzyme (Abstract). The enzymes are obtained from a bacterial source from a *Bacillus* (claim 5) strain such as *Bacillus coagulans* (claim 6) (page 7, lines 27, 30, and 36). The enzymes may also be obtained from a fungal source such as a yeast strain (*Candida* and *Saccharomyces*, claim 5) or a fungal strain (*Aspergillus*, claim 5) (page 8, lines 8-11).

53. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to incorporate the enzyme disclosed by *Xu* into the column system disclosed by *Howie*.

54. One having ordinary skill in the art would have been motivated to do this because *Xu* teaches the addition of one or more enzymes improves properties, such as increased crispiness, color enhancing effect, color fading effect, increased stiffness, rugged appearance, improved fried flavor, and lower fat content, of the potato product (page 3, lines 20-25).

55. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Howie et al.* US 20040265432 (hereinafter "*Howie*") as applied to claims 1 and 10 above, in view of *Schoenrock et al.* US 4412866 (hereinafter "*Schoenrock*").

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56. Regarding claim 11, *Howie* does not disclose using a Simulated Moving Bed process (SMB) for the chromatographic separation process.

57. *Schoenrock* discloses a simulated moving bed process may utilize adsorbents or exchangers selected from any of the known compounds or classes of compounds known in the art (column 3, lines 45-48).

58. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to substitute the column system disclosed by *Howie* with the simulated moving bed process disclosed by *Schoenrock*.

59. One having ordinary skill in the art would have been motivated to do this because *Schoenrock* teaches that the process is very useful in separating compounds such as glucose and fructose from an aqueous invert sugar solution or fructose from a solution which also contains starch hydrolysates (column 3, lines 57-60).

60. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Howie et al.* US 20040265432 (hereinafter "*Howie*") as applied to claim 1 above, in view of *Zyzak et al.* US 20040058046 (hereinafter "*Zyzak*").

61. With respect to claim 12, *Howie* discloses the level of reducing sugar has been reduced by at least about 90% (paragraph [0040]).

62. However, *Howie* does not disclose the content of reducing sugars after blanching is less than 0.25 wt. %.

63. *Zyzak* discloses potatoes having low levels of reducing sugars (i.e. <1.5%) are especially preferred for french potato snacks (paragraph [0061]).

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64. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to interpret the potatoes disclosed by *Howie* to have a reducing sugars content of the potatoes disclosed by *Zyzak*.

65. One having ordinary skill in the art would have been motivated to do this because *Howie* and *Zyzak* teach a reduction of acrylamide in the food product by treating the product with an enzyme which reduces reducing sugars and asparagine in the food product (*Howie*, paragraph [0013] and *Zyzak*, paragraph [0017]). Also, *Zyzak* teaches potatoes with a reducing sugars content less than about 1.5%, which is interpreted to include values slightly below 1.5%.

66. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Howie et al.* US 20040265432 (hereinafter "*Howie*") as applied to claim 17 above, in view of *Tricoit et al.* US 20040115321 (hereinafter "*Tricoit*").

67. Regarding claim 18, *Howie* does not disclose a fried potato product comprising at least 3g potassium and at least 3.5g citric acid per kg product.

68. *Tricoit* discloses blanched potatoes are chilled by soaking in a cold solution containing from 0.1 up to 1% salt (NaOH), salts (K_2HPO_4 , KH_2PO_4 , sodium acid pyrophosphate (SAPP), or the like) and/or an antioxidant, for instance an antioxidant selected from the group consisting of citric acid, ascorbic acid, caffeic acid, chlorogenic acid (paragraph [0062]).

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69. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to soaking the blanched potatoes disclosed by *Howie* with the cold solution disclosed by *Tricoit* prior to frying.

70. One having ordinary skill in the art would have been motivated to do this because *Tricoit* teaches acrylamide formation is blocked by preventing glycerol formation using an antioxidant such as citric acid (paragraph [0024]).

71. It would also have been obvious to a person of ordinary skill in the art at the time the invention was made to interpret the potato product disclosed by *Tricoit* to include at least 3g potassium and at least 3.5g citric acid per kg of product.

72. One having ordinary skill in the art would have been motivated to do this because the amounts disclosed by the applicant of potassium and citric acid per kilogram of product is equivalent to .30g and .35g, respectively, per 100g of product. The total amount of these items present is about .65g per 100g of product. Since *Tricoit* teaches the total of these items present can go up to about 1%, or 1g per 100g of product, it is concluded the amounts of potassium, citric acid, and sodium acid pyrophosphate taught by *Tricoit* fall within the applicant's claimed range.

73. Claims 20 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Tricoit et al.* US 20040115321 (hereinafter "*Tricoit*") as applied to claim 19 above, in view of *Zyzak et al.* US 20040058046 (hereinafter "*Zyzak*").

74. With respect to claim 20, *Tricoit* does not disclose a blanched potato product with a reducing sugar content less than 0.25 wt %.

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75. *Zyzak* discloses potatoes having low levels of reducing sugars (i.e. <1.5%) are especially preferred for french potato snacks (paragraph [0061]).

76. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to interpret the potatoes disclosed by *Tricoit* to have a reducing sugars content of the potatoes disclosed by *Zyzak*.

77. One having ordinary skill in the art would have been motivated to do this because *Tricoit* and *Zyzak* teach a reduction of acrylamide in the food product by treating the product with an antioxidant or enzyme which reduces glycerol and asparagine in the food product (*Tricoit*, paragraph [0024] and *Zyzak*, paragraph [0017]). Also, *Zyzak* teaches potatoes with a reducing sugars content less than about 1.5%, which is interpreted to include values slightly below 1.5%.

78. Regarding claim 28, *Tricoit* discloses blanched potatoes are chilled by soaking in a cold solution containing from 0.1 up to 1% salt (NaOH), salts (K_2HPO_4 , KH_2PO_4 , sodium acid pyrophosphate (SAPP), or the like) and/or an antioxidant, for instance an antioxidant selected from the group consisting of citric acid, ascorbic acid, caffeic acid, chlorogenic acid (paragraph [0062]).

79. However, *Tricoit* does not disclose the potato product having at least 100mg of an acid pyrophosphate per kg of product.

80. It would have been obvious to a person of ordinary skill in the art at the time the invention was made to interpret the potato product disclosed by *Tricoit* to include at least 100mg of an acid pyrophosphate per kg of product.

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81. One having ordinary skill in the art would have been motivated to do this because the amounts disclosed by the applicant of potassium, citric acid, and acid pyrophosphate per kilogram of product is equivalent to .30g, .35g, and .01g, respectively, per 100g of product. The total amount of these items present is about .66g per 100g of product. Since *Tricoit* teaches the total of these items present can go up to about 1%, or 1g per 100g of product, it is concluded the amount of sodium acid pyrophosphate taught by *Tricoit* falls within the applicant's claimed range.

Conclusion

82. Any inquiry concerning this communication or earlier communications from the examiner should be directed to TYNESHA MCCLAIN-COLEMAN whose telephone number is (571)270-1153. The examiner can normally be reached on Monday - Thursday 7:30AM - 5:00PM Eastern Time.

83. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on (571)272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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84. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/TYNESHA L MCCLAIN-COLEMAN/
Patent Examiner, Art Unit 1794

/Jennifer McNeil/
Supervisory Patent Examiner, Art Unit 1794